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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,458	02/27/2004	Makoto Ohhira	15115/107001	5178

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EXAMINER

VU, PHU

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/789,458	OHHIRA, MAKOTO ET AL.	
	Examiner	Art Unit	
	Phu Vu	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 13 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has referred to a "coherent length" of sunlight however it is not apparent if applicant is referring to a "coherence length" or some other calculated value. Applicant has not provided a method to measure or calculate coherent length of any light source is assumed to be L is given approximately by $L = \lambda^2 / (n \Delta\lambda)$, where λ is the central wavelength of the source, n is the refractive index of the medium, and $\Delta\lambda$ is the spectral width of the source. If this is not the case than clarification to how this value is derived or physically what distance this represents is suggested.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 —4 and 6-11 are rejected under 35 U.S.C. 102(b) as anticipated by Atkins et al. US Patent No. 6285425.

Regarding claims 1-3, Atkins teaches a reflector with a plurality of unit reflecting portions disposed parallel to a predetermined plane (fig. 7 element 270), wherein each unit reflection portions has a reflection face for reflecting incident light in a direction different from that of regular reflection light of said predetermined plane, a first reflection face arranged in a first unit reflecting portion comprising a first tangential plane tangent to the first reflecting face at a reference point on the first reflecting face; and a second reflection face arranged in a second reflecting portion adjacent to the first unit reflection portion comprising a second tangential plane parallel to the first tangential plane and tangent to the second reflection face wherein the shortest distance or an average shortest distance between a first reference point and second tangential plane is half or more a coherent length of sunlight (see fig. 7).

The reference does not explicitly state the distance between the tangential planes is half or more of a coherent length of the incident light however the reference discloses a pitch length of .1 mm at most (see column 8 lines 25-26 "10 per mm") however applicant has not supplied exactly what expected values half a coherent length is. If applicant is referring to coherence length (see 112 rejection) than the reference meets the limitation. Near the right side of the each reflector portion regions the tangential planes will almost be horizontal thus the distance between the tangential

planes will be significantly less since the point where both are horizontal the distance between the tangents will be zero. Since the points are arbitrarily set and the a specific wavelength is not specified the distance between the tangential planes be roughly of close this value in magnitude which will be greater in magnitude than a coherent length of some value of wavelength of the light. Coherence length values for sunlight are $L = \lambda^2 / (\Delta\lambda * n)$. Assuming an air medium ($n = 1$) and sunlight ($\Delta\lambda = 780-380 \text{ nm} = 400 \text{ nm}$) with center wavelength ($\lambda = 580 \text{ nm}$) in sunlight than coherence length equals 841 nm. Half a coherence length would equal 420.5 nm which is roughly .42 microns. The "pitch" of the reflectors is disclosed at its smallest point is 10 per millimeter which is roughly 100 microns. Since 100 microns is greater than a coherence length of .42 microns than this limitation is met. Regarding claim 3, the frequency distribution calculations are calculated the same way as the shortest distance is the same as is the "coherence length."

Regarding claim 4, the reference teaches reflector according to claim 3, wherein the distance between said first tangential plane and said second tangential plane is set to 80 micrometers or less. As previously stated since the placement of the points is arbitrary points where the tangent is closest to vertical will have a distance between tangential planes to be maximal in this case 100 micrometers max (which is the distance between two selected points as stated in claim 1) however, points where the tangential is horizontal will be significantly less. Since applicant has provided no limitation of the reference point than this limitation will be met for the set of points where the tangential is close to horizontal (see fig. 7).

Regarding claim 6, the reference teaches the reflector according to claim 5, wherein said plural unit reflecting portions are arranged such that directions for maximizing the intensity of the reflection light reflected by said reflection face cross each other in a predetermined position. Since applicant does not specify the predetermined position the crossing position of the reference is considered the predetermined position and this limitation is met or any specific structure that this limitation implies this limitation is met as the applicant does not supply any structure associated the reflector of claim 3 is considered to meet this limitation as applicant does not indicate any structural difference between the two.

Regarding claim 7, The reflector according to claim 6, wherein said plural unit reflecting portions are arranged such that diffusion reflection lights reflected by said reflection face cross each other in a predetermined area. Since applicant does not specify the predetermined area the area in the reference is considered where diffusion reflection lights cross of the reference. Applicant does not provide any structural difference between this structure and the structure according to claim 3.

Regarding claim 8, the reflector according to claim 3, wherein said reflector has a curved shape, and said reference point is determined as one of a point at which a point orthogonally projected onto said predetermined plane is conformed to the center point of gravity of a projection figure caused when said unit reflecting portion is orthogonally projected onto said predetermined plane, a point at which a normal line vector calculated at one point on said reflection face is similarly conformed to an average vector of the normal line vector calculated at each point, and a point for

maximizing the distance from a line segment connecting minimum and maximum points in the distance with respect to said predetermined plane on said reflection face to said reflection face. The reference point can be considered a point at which a point orthogonally projected onto said predetermined plane is conformed to the center point of gravity of a projection figure caused when said unit reflecting portion is orthogonally projected onto said predetermined plane thus (see fig. 7 and fig. 8 which shows another view of fig. 7).

Regarding claim 9, the reference teaches a display device having a reflection member and performing display by reflecting light incident from the exterior on the reflection member, wherein this reflection member is constructed by the reflector (see column 2 lines 44-46 and also see claim 4).

Regarding claim 10, than electronic apparatus characterized in that the display device according to claim 9 is used as a display (see column 2 lines 44-46 and also see claim 4)..

Regarding claim 11, Atkins teaches a method of light reflecting comprising steps of: projecting incident light from a direction of regular reflection of a predetermined plane and reflecting the incident light in a direction different from the direction of regular reflection of the predetermined plane by using a reflector the reflector comprising: a reflector with a plurality of unit reflecting portions disposed parallel to a predetermined plane (fig. 7 element 270), wherein each unit reflection portions has a reflection face for reflecting incident light in a direction different from that of regular reflection light of said predetermined plane, a first reflection face arranged in a first unit reflecting portion

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comprising a first tangential plane tangent to the first reflecting face at a reference point on the first reflecting face; and a second reflection face arranged in a second reflecting portion adjacent to the first unit reflection portion comprising a second tangential plane parallel to the first tangential plane and tangent to the second reflection face wherein the shortest distance or an average shortest distance between a first reference point and second tangential plane is half or more a coherent length of sunlight (see fig. 7).

The reference does not explicitly state the distance between the tangential planes is half or more of a coherent length of the incident light however the reference discloses a pitch length of .1 mm at most (see column 8 lines 25-26 "10 per mm") however applicant has not supplied exactly what expected values half a coherent length is. If applicant is referring to coherence length (see 112 rejection) than the reference meets the limitation. Near the right side of the each reflector portion regions the tangential planes will almost be horizontal thus the distance between the tangential planes will be significantly less since the point where both are horizontal the distance between the tangents will be zero. Since the points are arbitrarily set and the a specific wavelength is not specified the distance between the tangential planes be roughly of close this value in magnitude which will be greater in magnitude than a coherent length of some value of wavelength of the light. Coherence length values for sunlight are $L = \lambda^2 / (\Delta\lambda * n)$. Assuming an air medium ($n = 1$) and sunlight ($\Delta\lambda = 780-380 \text{ nm} = 400 \text{ nm}$) with center wavelength ($\lambda = 580 \text{ nm}$) in sunlight than coherence length equals 841 nm. Half a coherence length would equal 420.5 nm which is roughly .42 microns. The "pitch" of the reflectors is disclosed at its smallest point is 10 per millimeter which is

roughly 100 microns. Since 100 microns is greater than a coherence length of .42 microns than this limitation is met. The frequency distribution calculations are calculated the same way as the shortest distance is the same as is the "coherence length."

Claim Rejections - 35 USC § 103

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Atkins et al. US Patent No. 6285425.

Regarding claim 5, the reference teaches all the limitations of claim 5 except wherein said reflection face has a curved shape, and the average value of an angle formed by said predetermined plane and a plane perpendicular to an average vector of a normal line vector calculated at each point on said curved face ranges from 5 degrees or more to 15 degrees or less. The reference shows these angles to encompass a range that appears to be overlap the claimed range. The reference does not specify any specific angles however the references angles which correspond to alpha in the applicants specification being 5-15 degrees as in fig. 9 appear to include angles above and below the claimed range in addition to the claimed range (see fig. 7 angles made by the tangential to the reflectors 242 to the horizontal plane) and narrowing it can provide a narrow range reflection. Thus it would be obvious to one of ordinary skill in the art to apply a range of 5 degrees or more to 15 degrees or less limit reflection angles of the display. Moreover, The MPEP section 2144.05 [R-1] states In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu Vu whose telephone number is (571)-272-1562. The examiner can normally be reached on 8AM-5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phu Vu
Examiner
AU2871


ANDREW SCHECHTER
PRIMARY EXAMINER